



# SUBNERO L12L SERIES MODEMS

Long-range acoustic communication for a persistent presence

## APPLICATIONS

- ✓ Long-range operations in shallow, mid-range and deep waters
- ✓ Long-term seabed or sensor node deployments
- ✓ Communication and tracking of AUVs and subsea vehicles
- ✓ Coastal area monitoring networks



### ○ LONG RANGE COMMUNICATION

Over 10 km communication range, even in challenging littoral waters.

### ○ SOFTWARE-DEFINED DESIGN

Flexible, in-field configurable performance powered by UnetStack.

### ○ AUVS & SENSORS

Reliable long-range communication for AUVs and subsea IoT sensors.

### ○ HIGH THROUGHPUT

Supports data rates of up to 8 kbps in favourable conditions.

### ○ JANUS COMPATIBILITY

Fully compliant with NATO JANUS standard for interoperability.

### ○ BUILT-IN NETWORKING

Integrated network stack for large-scale underwater networks.



## L12L SERIES MODEMS

Designed for reliable long-range communication in shallow waters, Subnero's L12L series modem addresses one of the toughest challenges in underwater acoustics — maintaining robust links over extended distances in complex environments.

### TECHNICAL SPECIFICATION

#### COMMUNICATION

|                                |                             |
|--------------------------------|-----------------------------|
| Modulation (software defined)  | FH-BFSK, PSK-OFDM           |
| FEC (Forward Error Correction) | LDPC, BCH, Convolution code |
| JANUS support                  | Yes                         |
| Bandwidth                      | 7 kHz (9 – 16 kHz)          |

#### SOFTWARE

|                     |  |
|---------------------|--|
| Framework           | UnetStack  |
| User Interface      | Interactive web UI                                   |
| Software Interfaces | Java, Groovy, Python, C, JavaScript, Julia, JSON/TCP |

#### ELECTRICAL

|                    |  |
|--------------------|--|
| Power source       | 18 – 30 VDC (24 VDC recommended)   |
| Power consumption  | < 4 W (receive mode, nominal)<br>< 45 W (transmit mode, avg.)<br>< 150 mW (sleep mode)<br>< 1 mW (deep sleep mode) |
| Wake up modes      | Acoustic wake up<br>External electrical interrupt<br>Scheduled wake up   |
| External interface | Ethernet (10/100 Mbps), RS232  |
| On-board storage   | 256 GB, 1 TB   |

#### MECHANICAL

|                          |  |
|--------------------------|--|
| Hull material            | Aluminum, Stainless steel                                |
| Depth rating             | 300m, 2000m  |
| Dimensions               | SC: ø 100 x 313 mm, OC: ø 88 x 137 mm                    |
| Weight (in air / water)  | SC: 3.8 / 1.5 kg, OC: 0.65 kg / NA                       |
| Available Configurations | Standalone Configuration (SC)<br>Open Configuration (OC) |

Subnero Pte. Ltd., 1003 Bukit Merah Central #04-05, Singapore 159836

✉ sales@subnero.com ☎ +65 9819 9552 🌐 www.subnero.com

subnero 
 subnero\_comms 
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